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In re U.S. Patent Application of:

SERIAL NO.	:	10/600,156
APPLICANTS	:	Chaskar et al.
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EXAMINER	:	Duong, Frank
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TITLE	:	METHOD AND APPARATUS FOR PERFORMING INTER-TECHNOLOGY HANDOFF FROM WLAN TO CELLULAR NETWORK

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APPELLANT'S APPEAL BRIEF

Sir:

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Commensurate with the Notice of Appeal filed on August 23, 2006, and a Notice of Panel Decision from Pre-Appeal Brief Review mailed on October 20, 2006, Applicant/Appellant hereby submits this Appeal Brief to the Board of Patent Appeals and Interferences (hereinafter, the Board) under 37 C.F.R. §§41.31 and 37, and a draft for the $500 appeal brief fee set forth in 37 C.F.R. §41.20(b)(2). This Appeal Brief is filed within one month from the mailing date of the above-cited Notice of Panel Decision from Pre-Appeal Brief Review and the undersigned representative believes that no late fee is due. However, should the undersigned agent be mistaken, please consider this a petition for an extension of time under 37 C.F.R. §1.136(a) or (b) that may be required to avoid dismissal of this appeal, and charge Deposit Account No. 50-1924 for any required fee deficiency.

(1) REAL PARTY IN INTEREST

The real party in interest (RPI) is Nokia Corporation of Espoo, Finland, cited in an assignment of the U.S. application recorded on June 19, 2003 at reel 014224, frame 0413 and also cited in a corrective assignment of the U.S. application recorded on January 20, 2004 at reel 014914, frame 0325.

(2) RELATED APPEALS AND INTERFERENCES

There are no other pending appeals or interferences of which the undersigned representative and assignee/RPI is aware that will directly affect, be directly affected by or have a bearing on the Board's decision in this appeal.

(3) STATUS OF CLAIMS

Claims 1-43 stand finally rejected by a Final Office Action dated March 21, 2006. These claims are pending in this appeal, and are reproduced in an Appendix (Section 8) accompanying this Brief.

(4) STATUS OF AMENDMENTS

No amendment to the claims was proposed subsequent to the final rejection of the claims in the Final Office Action dated March 21, 2006.

(5) SUMMARY OF CLAIMED SUBJECT MATTER

As presented herein, references to the application at issue will be made with respect to U.S. Patent Application Publication No. 2004/0090937, the patent application publication corresponding to this application.

In an exemplary embodiment, a method is provided for performing a low latency inter-technology handoff of a mobile node (MN) 3 from a wireless local area network (WLAN) 1 to a cellular network 2 (independent claim 1). See, e.g., FIG. 1. Note that although FIG. 1 depicts a cdma2000 network 2, the invention is not limited to only the architecture (i.e. cdma2000) shown in FIG. 1. See paragraph [0016], lines 4-6; see also paragraph [0050]. The method includes: transmitting a message (also referred to in the application as a "Bearer Context" message) from the MN 3 to the WLAN 1 for use by the cellular network 2, the message comprising information for use in establishing at least one access bearer with the cellular network 2 for an ongoing packet data session of the MN 3 being conducted through the WLAN 1; and responding to the receipt of the message with a Router Advertisement message that is forwarded towards the MN 3. See paragraphs [0032] and [0039]; see also FIG. 4. The message may be piggybacked on another message, or it may be sent as a separate message. See paragraph [0032], lines 13-19. The message may include information expressive of one or more of the following, or similar equivalent information: (a) a QoS requirement of an ongoing application or applications of the MN 3; (b) a unique identity of the MN 3 that is recognizable by the cellular network 2; (c) parameters to facilitate the creation of a Point-to-Point Protocol state in the cellular network 2; and/or (d) parameters to enable establishment of packet filters in the cellular

network 2. See paragraphs [0032]-[0038]. The method may also include authenticating and authorizing with the target cellular network 2 for the purpose of executing handoff. See paragraphs [0040]-[0045]; see also FIG. 4.

In another exemplary aspect of the invention, a data communications system is provided (independent claim 27). The data communications system includes: a mobile node (MN) 3, a wireless local area network (WLAN) 1 and a cellular network 2. The data communications system further includes: a transmitter for transmitting a message from the MN 3 to the cellular network 2 via the WLAN 1, the message comprising information for use in establishing access bearers in the cellular network 2 for an ongoing packet data session of the MN 3 being conducted through the WLAN 1; and a unit to respond to the receipt of the message with a Router Advertisement message that is forwarded towards the MN 3. See paragraphs [0032] and [0039]; see also FIGS. 1 and 4.

In a further exemplary aspect of the invention, a computer program product is provided (independent claim 33). See paragraph [0049]. The computer program product is embodied on a computer-readable medium and is for controlling operation of a mobile node (MN) 3 that is operable with a wireless local area network (WLAN) 1 and a cellular network 2. See, e.g., FIG. 1. The computer program is responsive to a change in at least one of received WLAN signal strength and signal quality for transmitting a message from the MN to the cellular network via the WLAN, the message comprising information for use in establishing at least one access bearer

in the cellular network for an ongoing packet data session of the MN being conducted through the WLAN. See paragraphs [0032] and [0039]; see also FIGS. 1 and 4.

In another exemplary aspect of the invention, a computer program is provided (independent claim 38). See paragraph [0049]. The computer program is embodied on a computer-readable medium and is for controlling operation of a network node 13 of a cellular network 2. The computer program is responsive to a receipt of a message from a mobile node (MN) 3 that is currently wirelessly coupled to a wireless local area network (WLAN) 1 for initiating the establishment of a cellular network access bearer for the MN 3, the message comprising information for use in establishing the at least one access bearer in the cellular network 2 for an ongoing packet data session of the MN 3 being conducted through the WLAN 1. See paragraphs [0032] and [0039]; see also FIGS. 1 and 4.

In a further exemplary aspect of the invention, a method is provided for performing a low latency inter-technology handoff of a mobile node (MN) 3 from a wireless local area network (WLAN) 1 to a cellular network 2 (independent claim 43). The method includes: transmitting a message from the MN 3 to the WLAN 1 for use by the cellular network 2, the message comprising information for use in establishing at least one access bearer with the cellular network 2 for an ongoing packet data session of the MN 3 being conducted through the WLAN 1, the information comprising information expressive of a QoS requirement of at least one ongoing application of the MN 3 and information expressive of a unique identity of the MN 3 that is recognizable by the

cellular network 2; and responding to the receipt of the message with a response message that is forwarded to the MN 3, the response message comprising a challenge for authenticating the MN 3 in the cellular network 2. See paragraphs [0032]-[0045]; see also FIGS. 1 and 4.

(6) GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

A. The first grounds for rejection (Issue A) presented for review by the Board is whether claims 1 and 27 are anticipated under 35 U.S.C. §102(b) by Xu et al. ("Mobile IP Based Micro Mobility Management Protocol in The Third Generation Wireless Network," Internet Draft, pp. 1-16, November 2000).

B. The second grounds for rejection (Issue B) presented for review by the Board is whether claims 1-6, 23, 26-28, 31-34, 37-40, and 42-43 are anticipated under 35 U.S.C. §102(e) by Purnadi et al. (U.S. Patent No. 6,708,031).

C. The third grounds for rejection (Issue C) presented for review by the Board is whether claims 7-22, 24-25, 29-30, 35-36, and 41 are rendered obvious under 35 U.S.C. §103(a) by Purnadi et al. in view of Malki et al. ("Low Latency Handoff in Mobile IPv4," Internet Draft, pages 1-65, May 2001).

(7) ARGUMENT

A. ISSUE A: CLAIMS 1 AND 27

In the Final Office Action dated March 21, 2006, the Examiner rejected claims 1 and 27 under 35 U.S.C. 102(b) as being anticipated by Xu et al.

Claim 1 recites:

> A method to perform a low latency inter-technology handoff of a mobile node (MN) **from a wireless local area network (WLAN) to a cellular network**, comprising: transmitting a message from the MN to the WLAN for use by the cellular network, the message comprising information for use in establishing at least one access bearer with the cellular network for an ongoing packet data session of the MN being conducted through the WLAN; and responding to the receipt of the message with a Router Advertisement message that is forwarded towards the MN. (emphasis added)

Claim 27 recites:

> A data communications system comprising a mobile node (MN), a wireless local area network (WLAN) and a cellular network, further comprising: a transmitter for transmitting a message from the MN to the cellular network via the WLAN, the message comprising information for use in establishing access bearers in the cellular network for an ongoing packet data session of the MN being conducted through the WLAN; and a unit to respond to the receipt of the message with a Router Advertisement message that is forwarded towards the MN.

In the Response to Arguments section on pages 13-14 of the Final Office Action dated March 21, 2006, the Examiner states:

> The term WLAN, as known in the art and listed in the background of the instant application, is a broad term for any wireless communications technologies that employs Internet protocols 802.11b, 802.11a, 802.11g, Bluetooth[®] or 802.16, HiperLAN I, HiperLAN II, and Mobile IP, ...etc. Mobile IP is the most relevant WLAN technology and it is disclosed in the instant application. Mobile IP must have all the functionalities or elements of a mobile host (MH), a home agent

> (HA), a foreign agent (FA) and a corresponding host (CH). There is no doubt that Su's system, as clearly pointed out in the Office Action, is the WLAN because all of the above functionalities or element are disclosed and incorporated in the Su's system (*see Fig. 1 and pages 3-4 of Su reference*). Thus, Examiner asserts the interpretation of Xu reference is exact to that claimed by the Applicants of the instant application.

Note that the repeated references to "Su" are presumptively meant to indicate the "Xu" reference as identified in the Final Office Action, the Non-Final Office Action of October 24, 2005 and elsewhere.

An important issue at hand concerns the characterizations of or definitions for various wireless terms and technologies including "WLAN," "cellular network," "cdma2000" and "Mobile IP." The Applicants disagree with the Examiner's repeated assertions, as made in the Non-Final Office Action of October 24, 2005, as impliedly made in the Final Office Action of March 21, 2006 and as made in the Advisory Action of July 6, 2006 that cdma2000 is a WLAN technology and, thus, that Xu et al. anticipates claims 1 and 27 of the instant application.

The Examiner's chain of reasoning for the §102(b) rejection of claims 1 and 27 based on Xu et al. appears to be thus: **(1)** the definition for cdma2000 is equivalent to the definition for WLAN; **(2)** a WLAN is "any wireless communication[] technolog[y] that employs Internet protocols to include... Mobile IP" (Final Office Action, p. 13); **(3)** Mobile IP is the most relevant WLAN technology (Final Office Action, p. 13); **(4)** the definition for Mobile IP is a system that has four elements, MH, HA, FA and CH (Final Office Action, p. 14); **(5)** Xu et al. discloses those four

elements (Final Office Action, p. 14); **(6)** because of (2), WLAN has the same definition; **(7)** therefore Xu et al. discusses a WLAN and, more importantly, a handoff of a mobile node (MN) from a WLAN to a cellular network (see (1) above); and **(8)** based on the Examiner's interpretation, Xu et al. anticipates claims 1 and 27 of the application (Final Office Action, p. 14).

Note that step (1) and, accordingly, step (6) of this chain are implicit in the §102(b) rejection of claims 1 and 27. On page 2 of the Final Office Action, the Examiner equates the WLAN of claim 1 to the RNN reference in Xu et al. The Examiner also equates the cellular network of claim 1 to the PDSN reference in Xu et al. Although Xu et al. are only discussing one network, namely a "third generation cdma2000 network" (Xu et al., Abstract), the Examiner utilizes two portions of the system in Xu et al. when referring to the WLAN and cellular network of claim 1. In such a manner, the Examiner is implicitly equating a WLAN to a cellular network. This implicit association the Examiner makes is significant since the Examiner uses a subsequent, erroneous analysis of WLAN as the basis for asserting that Xu et al. anticipates a handoff of a mobile node (MN) from a WLAN to a cellular network (i.e. the subject matter of claims 1 and 27).

In turn, the Applicants dispute: **(A1)** the definition the Examiner attributes to Mobile IP; **(A2)** the Examiner's definition for WLAN and Cellular Network; **(A3)** the Examiner's characterization of Mobile IP as "the most relevant WLAN technology"; **(A4)** the assertion that the Specification of the instant application does not otherwise define or provide guidance concerning the terms

"cellular wireless technologies" or "WLAN technologies" (or, correspondingly, "cellular network" and "WLAN"); **(A5)** the assertion that the system discussed in Xu et al. relates to WLAN technology; and **(A6)** the assertion that Xu et al. relates to inter-technology handoffs. Note that two additional sections are present below: **(A0)** general observations; and **(A7)** conclusion.

The Applicants further note that in the subsequently discussed rejections of claims under §102(e) based on Purnadi et al. and under §103(a) based on Purnadi et al. in view of Malki et al., the Examiner uses similar arguments to those put forth above with respect to the §102(b) rejections based on Xu et al. Specifically, the Examiner equates cdma2000 to WLAN, uses the same definition of Mobile IP, implicitly equates Mobile IP with WLAN and rejects the claims based on the erroneous analysis of WLAN and ensuing application of WLAN to the references. The §102(e) and §103(a) rejections will be discussed below in Sections B and C, respectively.

(A0) General Observations

Initially, the Applicants observe that "cdma2000," "UMTS," "Mobile IP," "IEEE 802.11" ("802.11"), "HiperLAN" and "Bluetooth®" refer to established communication protocols and/or standards. In particular, cdma2000 indicates a family of standards established by the 3rd Generation Partnership Project 2 (3GPP2). See, e.g., "Introduction to cdma2000 Standards for Spread Spectrum Systems," 3GPP2 C.S0001-C Version 1.0, May 28, 2002. 802.11 indicates a family of standards established by the American National Standards Institute (ANSI) and the

Institute of Electrical and Electronics Engineers (IEEE). See, e.g., "Part 11: Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) Specifications," ANSI/IEEE Std 802.11, 1999 Edition (R2003). Mobile IP indicates a family of standards-based protocols established by the Internet Engineering Task Force (IETF). See, e.g., "IP Mobility Support," IETF RFC 2002, October 1996; "IP Mobility Support for IPv4," IETF RFC 3344, August 2002. Similar definitions, as based on underlying documents officially published by the respective standards-setting body, hold for the other communication protocols and standards identified above. The above-presented characterization of, definitions for and bases underlying (e.g. published standards for) the various protocols and standards are known to one of ordinary skill in the art. Specifically, the above-presented characterization of, definition for and basis underlying (i.e. RFC 2002) Mobile IP was known to one of ordinary skill in the art at the time the invention was made. (See Section A1 below.)

Although the Applicants refer above to protocols and standards, the distinction between the two terms may not be clear. The Webopedia Online Computer Dictionary defines a protocol as: "An agreed-upon format for transmitting data between two devices." The Webopedia Online Computer Dictionary defines a standard as: "A definition or format that has been approved by a recognized standards organization or is accepted as a de facto standard by the industry. Standards exist for programming languages, operating systems, data formats, communications protocols, and electrical interfaces." Thus, in the context presented, a standard can be said to define one or more communication protocols. In the arguments presented below, the term "standard" (or

"standards" in the plural) will primarily be used, though it is understood that the same arguments are herein implicitly applied to any and all pertinent protocols and external references thereto.

In discussing wireless systems, one often refers to "technologies," "systems" or "networks," such as "cdma2000 technology," "a cdma2000 system" or "a cdma2000 network." Such references indicate that the technology, system or network being discussed utilizes that particular standard or a standard from that body of standards.

(A1) The Examiner's Definition for Mobile IP

As quoted above, in the Response to Arguments section on pages 13-14 of the Final Office Action, the Examiner states in part:

> Mobile IP must have all the functionalities or elements of a mobile host (MH), a home agent (HA), a foreign agent (FA) and a corresponding host (CH).

The definition the Examiner attributes to Mobile IP is based on constituent elements of a MH, a HA, a FA and a CH. This definition forms the basis for the rejection of claims 1 and 27 under 35 U.S.C. §102(b) with reference to Xu et al. However, the definition for Mobile IP utilized by the Examiner is erroneous and, thus, the application of the Examiner's definition to Xu et al., and the ensuing rejection of the claims due to Xu et al., is also incorrect.

It is well-known to those of ordinary skill in the art at the time the invention was made that Mobile IP refers to a series of protocols defined by the IETF, at least in part, by the standard: "IP

Mobility Support," IETF RFC 2002, October 1996.

The Abstract Section of RFC 2002 states:

> This document specifies protocol enhancements that allow transparent routing of IP datagrams to mobile nodes in the Internet. Each mobile node is always identified by its home address, regardless of its current point of attachment to the Internet. While situated away from its home, a mobile node is also associated with a care-of address, which provides information about its current point of attachment to the Internet. The protocol provides for registering the care-of address with a home agent. The home agent sends datagrams destined for the mobile node through a tunnel to the care- of address. After arriving at the end of the tunnel, each datagram is then delivered to the mobile node.

Mobile IP was subsequently further defined by the IETF, at least in part, by the standard: "IP Mobility Support for IPv4," IETF RFC 3344, August 2002. Thus, Mobile IP refers to one or more protocols as defined by RFC 2002 and RFC 3344. See, e.g., 3GPP2 P.S0001, "Wireless IP Network Standard," 3GPP2, v1.0, December 10, 1999, pp. 1-52, p. 23; Perkins, "Mobile IP Joins Forces with AAA," IEEE Personal Communications, August 2000, pp. 59-61, 59; Sarikaya et al., "Packet Mode in Wireless Networks: Overview of Transition to Third Generation," IEEE Communications Magazine, September 2000, pp. 164-172, 170; Karagiannis, "Mobility support for ubiquitous Internet access," Ericsson Open Report, December 21, 2000, pp.1-70, 25; Jawanda, U.S. Patent No. 6,243,581, col. 2, lines 56-62; Leung, U.S. Patent No. 6,760,444, col. 1, lines 11-36, col. 2, lines 58-60; Bertrand et al., U.S. Patent No. 6,876,640, col. 2, lines 12-28; Koodli et al., U.S. Patent Application Publication No. 2004/0081122, para. [0002].

Specifically, and further to the Abstract of RFC 2002 as quoted above, Mobile IP "enables a mobile host to be addressed by the IP address it uses in its home network (home IP address), regardless of the network to which it is currently physically attached. Therefore, ongoing network connections to a mobile host can be maintained even as the mobile host is moving from one subnet to the other." See "Hot Topics In The Mobile Computing Industry," MOBILEINFO.com, October 2002. Available at http://www.mobileinfo.com/Hot_Topics/MobileIP.htm Clearly, Mobile IP is a protocol.

As quoted above, in the Response to Arguments section on pages 13-14 of the Final Office Action, the Examiner states:

> The term WLAN, as known in the art and listed in the background of the instant application, **is a broad term for any wireless communications technologies that employs Internet protocols** 802.11b, 802.11a, 802.11g, Bluetooth[®] or 802.16, HiperLAN I, HiperLAN II, and **Mobile IP**, ...etc. (emphasis added)

The Examiner tacitly admits that Mobile IP is a protocol. If Mobile IP is a protocol, then the term cannot be defined solely by reference to entities in the system.

The Specification of the instant application comports with the above-presented description of Mobile IP based on paragraphs [0005], [0015] and [0047]. Thus, as described in the Specification of the instant application, as understood in the art and as impliedly admitted by the Examiner, Mobile IP identifies one or more protocols developed and standardized by the IETF. As one or more protocols defined by IETF standards, although Mobile IP may involve elements

such as a MH, a HA, a FA and a CH, since Mobile IP is a protocol it cannot be defined exclusively by the presence of those four elements. To define Mobile IP in such a manner, as a system "hav[ing] all the functionalities or elements of a mobile host (MH), a home agent (HA), a foreign agent (FA) and a corresponding host (CH)," as the Examiner does in the Final Office Action, is incorrect.

(A2) The Examiner's Definition For WLAN and Cellular Networks

The Examiner fails to establish and rely on one definition for the term WLAN. In fact, the Examiner utilizes four different definitions, referred to below as definition a, definition b, etc. and discussed, respectively, in four subsections.

a. Definition a

In rejecting claim 1 on p. 2 of the Final Office Action, the Examiner equates a WLAN to the RNN (Radio Network Node) shown in Fig. 1 of Xu et al. No further explanation, information or supporting evidence is provided by the Examiner to support this contention. Even if one were to accept that the Examiner intended to convey that the presence of a RNN indicated the presence of a WLAN since a WLAN at least contains a RNN, which the Applicants do not admit is feasible or suggested, the Examiner's application is erroneous.

As understood by one of ordinary skill in the art, RNN is a generic term corresponding to any node in a radio network. In fact, the term RNN is undefined by the 3GPP, presumably because it

is a generic term and a common definition is not necessary. See 3GPP TR 21.905 v6.9.0 (2005-06); 3rd Generation Partnership Project (3GPP); Technical Specification Group Services and System Aspects; Vocabulary for 3GPP Specifications (Release 6).

Xu et al., in Section 3, state:

> The RNN [Radio Network Node] is responsible for mapping the Mobile Node identifier reference to a unique link layer identifier used to communicate with the PDSN [Packet Data Serving Node]. RNN validates the Mobile Station for access service and manages the physical layer connection to the Mobile Node.

There is no disclosure or suggestion that a RNN is a component of a WLAN nor any disclosure, suggestion or implication that the presence of a RNN corresponds to the presence of a WLAN. Furthermore, and as explained below in Section A3, Xu et al. are explicitly discussing a cdma2000 system. It is contradictory not only to the disclosure in Xu et al. but also to common knowledge and acceptance among those skilled in the art for one to assume that the presence of a RNN implies the presence of a WLAN.

b. Definition b

As quoted above, in the Response to Arguments section on pages 13-14 of the Final Office Action, the Examiner states:

> The term WLAN, as known in the art and listed in the background of the instant application, is a broad term for any wireless communications technologies that employs Internet protocols 802.11b, 802.11a, 802.11g, Bluetooth[®] or 802.16, HiperLAN I, HiperLAN II, and Mobile IP, ...etc.

Here, the Examiner has defined WLAN by citing standards. This definition is overly narrow if limited solely to the standards given. Similarly, the definition is imprecise in that the Examiner ended it with "etc." Thus, the Examiner gave the impression that WLAN is defined as a set list of standards, wherein the list includes the ones cited and an indeterminate number of additional standards. This definition is vague and also incorrect. See Section A2.e below.

c. Definition c

On page 2 of the Advisory Action, the Examiner states:

> In addition, the above WLAN technology is also based on spread spectrum multiple access to include direct sequence or frequency hopping. Moreover, spread spectrum multiple access is commonly known as CDMA. CDMA2000 is the evolution of the old CDMA to support higher data rates as well as scalability with other cellular technology to include GSM, GPRS, TDMA and WCDMA.

Although this text is from the Advisory Action and, thus, is not stated in the Final Office Action wherein the Examiner rejects claims 1 and 27, it is expressive of the Examiner's confusion with the terms at issue. Not all spread spectrum systems are WLAN systems. Not all spread spectrum systems are cmda2000 systems. Not all spread spectrum multiple access systems are code-division multiple access (cdma) systems. Furthermore, cdma2000 technology is basically unrelated to technologies involving GSM, GPRS and TDMA, which are 2G and 2.5G technologies. cdma2000 is a parallel standard to WCDMA – there are significant differences between the two. As further explained in the discussion of definition e presented in Section A2.e

below, definition c is incorrect.

d. Definition d

The Examiner uses the definition for Mobile IP, as quoted above in Section A2, when attempting to apply Xu et al. to the WLAN discussed in the application. In such a manner, the Examiner utilizes the alleged definition for Mobile IP as a definition for WLAN. Presumptively this is done based on Examiner's contention in the Response to Arguments section on page 13 of the Final Office Action: "Mobile IP is the most relevant WLAN technology and it is disclosed in the instant application." The validity of this assertion is discussed in Section A3 below. As will be made clear in that section, this assertion is erroneous. Importing the Examiner's inaccurate definition for Mobile IP into WLAN only serves to magnify the error. In addition, by importing the definition of Mobile IP into the definition for WLAN, the Examiner fails to appreciate that the two terms correspond to different items. For example, as noted above, Mobile IP indicates a specific protocol that may be employed to enable a mobile node to retain a network connection even as it roams across different systems. In contrast, WLAN refers to a broad type of network. Clearly, a type of network is not equivalent to a protocol employed for a specific purpose.

e. The Correct Definition for WLAN In Relation To Cellular Network

Ironically, even though the Examiner utilizes four different definitions or meanings for WLAN, none of them are accurate.

Wireless networks can be separated into two broad categories: wireless local area networks (WLANs) and wireless wide area networks (WWANs). The difference between a WLAN and a WWAN is that a WWAN covers a larger geographic area than a WLAN. The technologies and standards relating to a WWAN are thus adapted to better cover a larger area than technologies and standards that relate to a WLAN. As is apparent, the difference between a WWAN and a WLAN is based on relative aspects or qualities of the system which are often expressed by citing example standards or technologies.

Cellular networks are a type of WWAN that employ a plurality of cells, with each cell served by a fixed transmitter known as a cell site or base station (BS or BSs in the plural). Each cell of the plurality of cells covers a different area such that the plurality of cells, connected together by a single network, provide radio coverage over a substantially wider area than the area of one cell. Cellular networks can employ one or more of a variety of standards including: cdma, cdma2000, GMS, UMTS, TDMA and WCDMA, as non-limiting examples. Cellular networks are designed to cover large geographic areas. Because of this nature, cellular networks are highly regulated in the United States, having licensed radio spectrums and requiring regulatory approval for many aspects, including individual deployments (e.g., placement of cell towers).

In comparison, a WLAN is designed to cover a much smaller geographic region. Generally, a single WLAN covers a singular geographic region. That is, a WLAN generally does not have a plurality of stations (e.g., BSs) interlinked to form a single network, though a WLAN is usually

capable of connecting and communicating with other networks or entities (e.g., the internet). Compared to cellular networks, WLANs are much less regulated. WLANs use unlicensed radio spectrum and do not require regulatory approval for individual deployment. That is, generally, consumers can set up a WLAN without prior governmental approval or sanction. Furthermore, WLAN components generally cost less than cellular network components. That is, usually it would be less expensive to set up a WLAN than to set up a cellular network. Examples of standards for WLAN include: IEEE 802.11 (a/b/g; Wi-Fi), HiperLAN I/II, Bluetooth® and IEEE 802.16 (WiMAX), as non-limiting examples.

The above-presented descriptions of WWAN, WLAN and cellular networks are known to one of ordinary skill in the art and, more specifically, to one of ordinary skill in the art at the time the invention was made.

Jawanda (cited above in Section A1 and of record in the pending application), at col. 2, line 38-col. 3, line 27, supports the WWAN/WLAN distinction in wireless architectures as discussed herein. Furthermore, Jawanda states that the WWAN 10 of FIG. 1 is a cellular communication system. Jawanda, col. 3, lines 1-2. As explained above, a WWAN is different from a WLAN. Thus, in accordance with this portion of Jawanda, and in accordance with the knowledge of one of ordinary skill in the art at the time the invention was made, a WLAN is not equivalent to a cellular network.

On p. 8 of Karagiannis (cited above in Section A1 and of record in the pending application), Section 2.2 states in part:

> The Bluetooth[®] access technology... is mainly specified as an ad-hoc technology that enables different electronic devices... to connect and communicate wirelessly with each other in a relatively short range without having to be configured or connected to a backbone network.

Although p. 9 of this document further describes a network (a "scatternet") comprising overlapping Bluetooth® coverage (a plurality of "piconets"), the document notes that performance issues (e.g., reduction in throughput) can become significant as the number of piconets increases. Thus, although Bluetooth® may be employed in a similar manner as a cellular network, the coverage is not nearly so broad (geographically) since various problems with such usage make broad-ranged Bluetooth® networks less desirable. That is, Bluetooth®, an example of a WLAN technology, is best suited for relatively short-range communications.

The Abstract Section of Pahlavan et al., a document identified by the Examiner on p. 17 of the Final Office Action and, thus, of record in the present application, states that the document "presents an overview of issues related to handoff with particular emphasis on hybrid mobile data networks." Pahlavan et al., "Handoff in Hybrid Mobile Data Networks," IEEE Personal Communications, April 2000, pp. 34-47, 34. Of particular note, Pahlavan et al. compare handoff procedures among three architectures or technologies: IEEE 802.11 WLANs, General Packet Radio Service (GPRS) networks and Cellular Digital Packet Data (CDPD) networks. See e.g. Pahlavan et al., Table 1 on p. 40. In describing these terms on page 35 of the document,

Pahlavan et al. characterize IEEE 802.11 WLANs as "small-coverage high-bandwidth data networks." GPRS is characterized as "low bandwidth." CDPD is characterized as having "low-speed wide-area-coverage." cdma2000 does not include small-coverage high-bandwidth data networks, as Pahlavan et al. have characterized IEEE 802.11 WLANs. Rather, cdma2000 corresponds with a (relatively) low-speed wide-area-coverage network. Although not explicitly stated, it is clear that a cdma2000 network would fall under the CDPD technology. Since the CDPD technology is distinct from the IEEE 802.11 WLAN technology, cdma2000 does not fall under the WLAN technology category.

The discussion by Pichna et al., at col. 1, lines 22-47, comports with and supports the above-presented descriptions of a WLAN and a cellular network. Pichna et al., U.S. Patent No. 6,904,055 (identified by the Examiner in the Non-Final Office Action and, thus, of record for the present application).

In Section 5 on pages 9-13 of Nortel Networks, Nortel Networks reviews different wireless broadband technologies before ultimately proposing that the CDMA2000 standard be adopted and employed to provide wireless broadband service to Australia. Nortel Networks, "Delivering Wireless Broadband Services to Regional and Rural Australia," May 2002 (attached to Applicants' Response to Final Office Action dated June 20, 2006 and, as evident by the Examiner's Advisory Action, reviewed by the Examiner and, thus, of record for this application). The wireless technologies reviewed include: satellite (Section 5.1), multi-point microwave–or

multi-channel, multi-point–distribution service (MMDS) (Section 5.2), local multipoint distribution service (LMDS), wireless local area networks (wireless LANs, i.e. WLANs) (Section 5.4), and cellular networks (Section 5.5).

First, Applicants note that Nortel Networks clearly separates WLANs and cellular networks into two distinct categories. Second, in reviewing cellular networks, Nortel Networks clearly place cdma2000 in the cellular networks category. Thus, cdma2000 does not belong in the WLAN category. In Appendix A of Nortel Networks, the effective coverage of a WLAN is compared to a CDMA network. The results clearly indicate that the range of a CDMA network is significantly larger than that of an equally-spaced conventional WLAN. On page 26, Nortel Networks observes that in order to utilize an outdoor WLAN instead of a CDMA cellular network "the distance between access points [would] need to be reduced by at least half when compared to traditional cellular networks and directional antennas [would] need to be installed at each customer premise." Clearly a WLAN has different attributes and capabilities than a CDMA2000 network and, by extension, cellular networks in general.

It is clear to one of ordinary skill in the art that the Examiner is repeatedly conflating WLAN, cdma2000 and cellular networks. A WLAN is plainly not a cellular network. Furthermore, it is apparent that the terms WLAN and cdma2000 are not synonymous and cannot be used interchangeably. To do so is not only erroneous but also contrary to common knowledge, acceptance and usage in the art.

(A3) Mobile IP as "the most relevant WLAN technology"

In the Response to Arguments section on page 13 of the Final Office Action, the Examiner states in part:

> Mobile IP is the most relevant WLAN technology and it is disclosed in the instant application.

Paragraphs [0005] and [0008] of the instant application state:

> The Internet Engineering Task Force (IETF) has developed a Mobile IP protocol to enable IP-layer handoffs during an ongoing Internet session. To minimize disruption to the mobile node's Internet connectivity during such handoffs, protocols such as Fast Handoff and Context Transfer are also under development. While these protocols provide the core framework for seamless inter-technology handoffs, additional effort is required to apply them to specific environments. Further, these protocols assume the existence of a "trusting" relationship between the source (e.g., WLAN) and destination (e.g., cdma2000) access networks, which is not always the case.
> ...
> The method advantageously requires no significant modification to existing cellular network protocol architectures. Further, the method is compatible with IP-layer handoff techniques such as low-latency Mobile IPv4 and fast Mobile IPv6.

Thus, although Mobile IP is disclosed in the instant application, it is clearly not "the most relevant WLAN technology" as the Examiner asserts. The adaptation of the exemplary embodiments of the invention to Mobile IP is discussed in the Specification of the instant application but by no means is this adaptation characterized by the Applicants as "the most relevant WLAN technology." See, e.g., paragraphs [0021], [0047] and [0048] of the instant application.

In the Response to Final Office Action, at p. 12, lines 2-4 the Applicants requested that the Examiner provide supporting citations and reasoning to back up this allegation.

In the Advisory Action, the Examiner stated:

> Mobile IP technology to include Sony, Columbia and IBM systems emerged in the early ninety [*sic*]. On the other hand, WLAN technology to include 802.11b, 802.11a/g/e, HiperLAN I/II, Bluetooth[®], 802.15, 802.16 and HomeRF emerged in the late ninety [*sic*] and they evolved from or integrated with Mobile IP technology. Therefore, examiner's characterization is reasonable and just.

Here, the Examiner has provided his own personal interpretation of the relationship between the Mobile IP standard and WLAN technology. Clearly this does not constitute supporting evidence. Furthermore, there is no support provided to establish that this interpretation is one shared by a person of ordinary skill in the art at the time the invention was made. In fact, as explained above in Sections A1, A2 and A3, and as supported by factual evidence presented in those sections, the Mobile IP standard may be considered to be one subset of WLAN technologies. The undersigned representative was unable to locate any disclosure or suggestion in any of the references considered to support the notion that "Mobile IP is the most relevant WLAN technology."

Despite Applicant's request for supporting evidence, the Examiner failed to provide any specific citations in the present application that characterize Mobile IP in this manner. The instant application does not make such a characterization. Furthermore, the Examiner failed to provide any evidence, other than his own mere allegations and conjecture, to support the notion that

"Mobile IP is the most relevant WLAN technology." Thus, the Examiner has repeatedly mischaracterized the invention in this nature without providing or relying on any supporting factual basis.

(A4) The Application's Definitions for "cellular network" and "WLAN"

Turning to the application at issue, it is well established that "[a] patentee can choose his own terms and use them as he wishes so long as he remains consistent in their use and makes their meaning reasonably clear." Ellipse Corp. v. Ford Motor Co., 452 F.2d 163, 167, 171 USPQ 513, 515 (7th Cir. 1971), cert. denied, 406 U.S. 948, 173 USPQ 705 (1972). "A patentee may define his own terms, regardless of common or technical meaning, and fairness to the patentee requires the court to accept his definition of words, phrases, and terms." International Cork Co. v. New Process Cork Co., 6 F.2d 420, 422 (2d Cir. 1925).

Paragraph [0003] of the instant application states in part:

> Cellular wireless technologies, such as cdma2000 and Universal Mobile Telecommunication System (UMTS), are expected to provide high speed wireless Internet connectivity to mobile users over a wide coverage area. At the same time, WLAN technologies, such as IEEE 802.11 and European HiperLAN, are becoming increasingly popular, as they provide a low cost and high speed wireless access solution for localized "hot spots".

The Specification of the instant application clearly sets forth two distinct technologies: "cellular wireless technologies" and "WLAN technologies." One notable difference between the two technologies, as specified, is that cellular wireless technologies have a "wide coverage area"

while WLAN technologies are for "localized hot spots." The Specification also indicates example standards and bodies of standards that each category of technologies encompasses. Cellular wireless technologies include cdma2000 and UMTS while WLAN technologies include IEEE 802.11 and European HiperLAN. As characterized and described in the Specification of the instant application, clearly cdma2000 is not a WLAN technology.

In response to this point, on p. 2 of the Advisory Action, the Examiner stated:

> Applicants, in the Remarks of the outstanding response, refer to certain passages in the specification of the instant application that list (not define) some examples of cellular technology and WLAN technology and assert that examiner must read the claimed WLAN as described. Examiner's response to such assertion is that limitations appearing in the specification but not recited in the claim are not read into the claim. E-Pass Techs., Inc. v. 3Com Corp., 343 F.3d 1364, 139, 67 USPQ2d 1947, 1950 (Fed.Cir. 2003).

Here, the Examiner fails to appreciate the nature of the paragraph cited and the appropriate tests to be applied and the order within which they are considered.

The paragraph quoted above, paragraph [0003], clearly provides a definitional framework for the terms. Although the paragraph provides examples for each technology, unlike Examiner's definition b above (see Section A2.b) the paragraph also provides a definitional description for each technology. Despite the descriptions provided, the Examiner misinterpreted the nature of paragraph [0003] and refused to accept the definition provided.

With respect to the appropriate tests, as stated in E-Pass Techs. at 67 USPQ2d 1949-50, first, the ordinary meaning of the claim term(s) is considered, with reference to one or more appropriate dictionaries being common practice. The use of the disputed claim term is also considered within its context.

Section A2 above directly addresses the ordinary meaning accorded the claim terms by one of ordinary skill in the art at the time the invention was made.

Second, the Specification is considered to determine "whether the presumption of ordinary and customary meaning is rebutted. ...The patentee may have acted as his own lexicographer and imbued the claim terms with a particular meaning or 'disavowed or disclaimed scope of coverage, by using words or expressions of manifest exclusion or restriction.'" The Court further observes: "Interpretation of descriptive statements in a patent's written description is a difficult task, as an inherent tension exists as to whether a statement is a clear lexicographic definition or a description of a preferred embodiment. The problem is to interpret claims 'in view of the specification' without unnecessarily importing limitations from the specification into the claims."

In the alternative, should the Board disagree, that the ordinary meaning of the terms as discussed herein insufficiently addresses the first test, the Specification provides definitions for the terms. In this case, paragraph [0003] defines the two terms and provides examples for the respective technologies. While it would be erroneous to limit the claim terms solely to the example

standards cited (i.e. such an action would constitute unnecessarily importing limitations from the specification into the claims), it is clearly not erroneous to give the claim terms the definitions accorded them in the Specification of the application. Contrary to the Examiner's assertions in the Advisory Action, this would not comprise reading unnecessary limitations into the claims.

(A5) Xu et al. Does Not Relate To WLAN Technology

In the Response to Arguments section on pages 13-14 of the Final Office Action, the Examiner states:

> There is no doubt that Su's system, as clearly pointed out in the Office Action, is the WLAN because all of the above functionalities or element are disclosed and incorporated in the Su's system (*see Fig. 1 and pages 3-4 of Su reference*).

Here the Examiner is asserting that the system described by Xu et al. encompasses a WLAN because it contains all four of the elements in the Examiner's definition of Mobile IP.

First, in this assertion the Examiner implicitly equates Mobile IP to a WLAN by incorporating the Examiner's alleged definition for Mobile IP into a definition for WLAN. Although Mobile IP can be employed with respect to WLAN systems, the two are distinctly different entities. As noted above, Mobile IP is a protocol while WLAN refers to a type of network, as understood by one of ordinary skill in the art at the time the invention was made and, in the alternative, as specified in the Specification of the instant application. As discussed above in Sections A2.d and A2.e, to equate Mobile IP with a WLAN is fallacious. Second, also as explained above, the

Examiner's four-element definition for Mobile IP is itself incorrect. Thus, since the Examiner implicitly equates Mobile IP to a WLAN and employs an erroneous definition of Mobile IP, the Examiner's alleged application of WLAN to Xu et al. is also incorrect.

The appropriate definition of WLAN to be used in interpreting Xu et al. and in comparing the disclosure of Xu et al. with that of the instant application is the definition as understood by one of ordinary skill in the art at the time the invention was made or, in the alternative, the definition recited in paragraph [0003] of the instant application.

Furthermore in this regard, in the Abstract and Introduction sections, Xu et al. state:

> This document defines extensions to the Mobile IP protocol to allow mobility management for the interface between a radio network and a packet data network **in the third generation cdma2000 network**. (emphasis added)

Xu et al. exclusively discuss Mobile IP as it relates to a cdma2000 network. As discussed above in Section A2.e and as enumerated in paragraph [0003] of the instant application, cdma2000 is a cellular wireless technology and not a WLAN technology. Hence, the Examiner's assertion that the system discussed in Xu et al. relates to WLAN technology is incorrect.

Applicants observe that Pahlavan et al. further describe a handoff that occurs between any two of the three technologies discussed therein (namely IEEE 802.11 WLANs, GPRS and CDPD) as an "intertech handoff." See, e.g., Pahlavan et al., Figure 1 on p. 35. A type of "intertech handoff" is

precisely what the instant application is concerned with, namely a handoff that occurs as between a cellular wireless technology and a WLAN technology. Utilizing the appropriate definition for WLAN technology, Xu et al. cannot be seen to anticipate the instant application.

(A6) Xu et al. Does Not Relate to Inter-Technology Handoffs

At Section 4.1, Xu et al. state:

> In a cdma2000 network, the mobile node **initiates a connection** by sending a call setup indication to the RNN across the radio network. When this indication is received by a RNN, a Registration Request will be sent from the RNN to the PDSN to setup a new RP session. (emphasis added)

Here, Xu et al. are discussing the process by which a "mobile node initiates a connection." Xu et al. are not discussing handoffs in this section. In contrast, claim 1 of the instant application is directed to "[a] method to perform a low latency inter-technology handoff of a mobile node (MN) from a wireless local area network (WLAN) to a cellular network". Claim 27 of the present application is directed to "[a] data communications system... comprising: a transmitter for transmitting a message from the MN to the cellular network via the WLAN, the message comprising information for use in establishing access bearers in the cellular network for an ongoing packet data session of the MN being conducted through the WLAN". Hence, the Examiner's alleged application of Section 4.1 of Xu et al. to the instant application, as made on page 14 in the Response to Remarks section of the Final Office Action, is incorrect.

(A7) CONCLUSION: Xu et al. Does Not Anticipate Claims 1 and 27

Based on the above explanations and arguments, it is clear that Xu et al. cannot be seen to anticipate claims 1 and 27 at least for the reason that there is no express disclosure (or any suggestion of) at least "[a] method to perform **a low latency inter-technology handoff** of a mobile node (MN) **from a wireless local area network (WLAN) to a cellular network**" (emphasis added) nor "[a] data communications system... comprising: a transmitter **for transmitting a message from the MN to the cellular network via the WLAN**, the message comprising information for use **in establishing access bearers in the cellular network for an ongoing packet data session of the MN being conducted through the WLAN**" (emphasis added) as claimed in claims 1 and 27, respectively. Applicants respectfully request that the Board reconsider and remove the rejections of claims 1 and 27 for this reason.

B. ISSUE B: CLAIMS 1-6, 23, 26-28, 31-34, 37-40, AND 42-43

In the Final Office Action dated March 21, 2006, the Examiner rejected claims 1-6, 23, 26-28, 31-34, 37-40, and 42-43 under 35 U.S.C. 102(e) as being anticipated by Purnadi et al.

The Purnadi et al. rejections the Examiner makes are based on similar incorrect definitions and on the above-noted erroneous interpretation of cdma2000 as a WLAN technology. The Applicants repeat and reassert the arguments made above in Section A with regards to this misinterpretation. The portions of Purnadi et al. cited by the Examiner in support of the Examiner's assertion that Purnadi et al. disclose the elements of claim 1 of the instant application

are unclear at best. The Examiner cites Fig. 1 of Purnadi et al. as allegedly disclosing "a wireless local area network (cdma2000)." See Final Office Action at page 4. As per arguments presented above, cdma2000 is not a WLAN technology and should not be considered as such. Hence, Purnadi et al. fail to disclose or suggest a WLAN, let alone "[a] method to perform a low latency inter-technology handoff of a mobile node (MN) from a wireless local area network (WLAN) to a cellular network" as claimed in claim 1 of the instant application. Purnadi et al. also fail to disclose or suggest "[a] data communications system comprising a mobile node (MN), a wireless local area network (WLAN) and a cellular network" as claimed in claim 27 of the instant application. The Examiner's arguments regarding the alleged application of Purnadi et al. to independent claims 33, 38 and 43 of the instant application mirror the Examiner's arguments concerning independent claims 1 and 27. Hence, the Applicants reallege and reassert the arguments concerning claims 1 and 27 as with regards to the alleged application of Purnadi et al. to independent claims 33, 38 and 43. It is clear that Purnadi et al. cannot be seen to anticipate claims 1-6, 23, 26-28, 31-34, 37-40, and 42-43. Applicants respectfully request that the Board reconsider and remove the rejections of claims 1-6, 23, 26-28, 31-34, 37-40, and 42-43 for this reason.

C. ISSUE C: CLAIMS 7-22, 24-25, 29-30, 35-36, AND 41

In the Final Office Action dated March 21, 2006, the Examiner rejected claims 7-22, 24-25, 29-30, 35-36, and 41 under 35 U.S.C. 103(a) as being unpatentable over Purnadi et al. in view of Malki et al.

The Examiner rejected claims 7-22, 24-25, 29-30, 35-36, and 41 under 35 U.S.C. 103(a) as being unpatentable over Purnadi et al. in view of Malki et al. This rejection is respectfully disagreed with, and is traversed. Applicants reassert the arguments made above with regards to the application of Purnadi et al. to the subject application. Because Purnadi et al. does not teach "[a] method to perform a low latency inter-technology handoff of a mobile node (MN) from a wireless local area network (WLAN) to a cellular network" as claimed in claim 1 of the instant application nor "[a] data communications system comprising a mobile node (MN), a wireless local area network (WLAN) and a cellular network" as claimed in claim 27 of the instant application, and Malki et al. does not teach "[a] method to perform a low latency inter-technology handoff of a mobile node (MN) from a wireless local area network (WLAN) to a cellular network" as claimed in claim 1 of the instant application nor "[a] data communications system comprising a mobile node (MN), a wireless local area network (WLAN) and a cellular network" as claimed in claim 27 of the instant application (and the Examiner does not assert that Malki et al. teaches either of these), then the proposed combination does not teach "[a] method to perform a low latency inter-technology handoff of a mobile node (MN) from a wireless local area network (WLAN) to a cellular network" as claimed in claim 1 of the instant application nor "[a] data communications system comprising a mobile node (MN), a wireless local area network (WLAN) and a cellular network" as claimed in claim 27 of the instant application. In that Purnadi et al. is inapplicable, claims 7-22, 24-25, 29-30, 35-36, and 41 cannot be seen as unpatentable over Purnadi et al. in view of Malki et al.

CONCLUSION

For at least the above reasons, the Applicants/Appellants contend that Xu et al. does not anticipate claims 1 and 27 under 35 U.S.C. 102(b); Purnadi et al. does not anticipate claims 1-6, 23, 26-28, 31-34, 37-40, and 42-43 under 35 U.S.C. 102(e); and Purnadi et al. in view of Malki et al. does not render obvious claims 7-22, 24-25, 29-30, 35-36, and 41 under 35 U.S.C. 103(a). The Applicants/Appellants respectfully request that the Board reverse the final rejection in the Final Office Action of March 21, 2006, and further that the Board rule that the pending claims are patentable over the cited art.

Respectfully submitted:

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(8) CLAIMS APPENDIX

1. A method to perform a low latency inter-technology handoff of a mobile node (MN) from a wireless local area network (WLAN) to a cellular network, comprising:

transmitting a message from the MN to the WLAN for use by the cellular network, the message comprising information for use in establishing at least one access bearer with the cellular network for an ongoing packet data session of the MN being conducted through the WLAN; and

responding to the receipt of the message with a Router Advertisement message that is forwarded towards the MN.

2. A method as in claim 1, where the message is piggybacked on another message.

3. A method as in claim 1, where the message comprises information expressive of a QoS requirement of at least one ongoing application of the MN.

4. A method as in claim 1, where the message comprises information expressive of a unique identity of the MN that is recognizable by the cellular network.

5. A method as in claim 1, where the message comprises information expressive of parameters to facilitate the creation of a Point-to-Point Protocol state in the cellular network.

6. A method as in claim 1, where the message comprises information expressive of parameters to enable establishment of packet filters in the cellular network.

7. A method as in claim 1, where the message is piggybacked on a Router Solicitation message that is sent from an access router (AR) in response to receiving a Proxy Solicitation Request message from the MN.

8. A method as in claim 7, where the Router Advertisement is sent to the AR, which in response sends a Proxy Router Advertisement to the MN.

9. A method as in claim 8, where the Router Advertisement comprises a challenge for authentication and authorization purposes.

10. A method as in claim 8, where the MN responds to the Proxy Router Advertisement by sending a Registration Request message to the cellular network.

11. A method as in claim 10, where the Proxy Router Advertisement comprises a challenge for authentication and authorization purposes, and where the Registration Request message comprises information for identifying a home Authentication, Authorization, Accounting (AAA) function of the MN in the cellular network, and a response to the challenge received in the Proxy Router Advertisement.

12. A method as in 11, where, in response to receiving the Registration Request message, a query is sent to the home AAA of the MN.

13. A method as in claim 12, where the query is sent via a visited AAA either directly or via at least one intermediate broker AAA.

14. A method as in claim 12, where the query sent to the home AAA comprises information that indicates the challenge sent to the MN, and the response to the challenge received from the MN, for use by the home AAA in authenticating the MN.

15. A method as in claim 14, where the query sent to the home AAA comprises information that indicates the access service requested by the MN.

16. A method as in claim 14, further comprising, in response to successfully authenticating the MN, sending a success indication from the home AAA for authorizing access by the MN.

17. A method as in claim 16, where the success indication further comprises a ticket sent in clear text and in a form encrypted using a shared secret between the home AAA and the MN.

18. A method as in claim 17, where the clear text form of the ticket is stored in a cellular network node and where the encrypted ticket is sent to the MN via the AR.

19. A method as in claim 18, further comprising sending an acknowledgment (ACK) from the MN to the cellular network, the ACK comprising the clear text ticket.

20. A method as in claim 19, in response to receiving the clear text ticket from the MN, further comprising performing access bearer setup in the cellular network for establishing at least one access bearer for the MN.

21. A method as in claim 20, further in response to receiving the clear text ticket from the MN, registering the MN with the HA and, upon receiving a Registration Reply from the HA, forwarding the Registration Reply from the cellular network to the MN upon an established access bearer.

22. A method as in claim 17, further comprising generating a session key at the home AAA as clear text and in an encrypted form, using the shared secret between the MN and the home AAA, storing the clear text session key in a cellular network node, and forwarding the encrypted form of the session key to the MN for use by the MN in at least one of authenticating and encrypting future message transactions with the cellular network.

23. A method as in claim 1, where the message is sent by the MN in an encrypted form using a shared secret between the MN and a home Authentication, Authorization, Accounting (AAA) function of the MN in the cellular network.

24. A method as in claim 1, where communication between the MN and the cellular network comprises a HI/HACK (Handover Initiate/Handover ACK) message exchange, and where the message is piggybacked on the HI message.

25. A method as in claim 24, where the cellular network responds to a receipt of the message with a Mobile Node-Foreign Agent (MN-FA) challenge extension that is piggybacked on the HACK message

26. A method as in claim 1, where the MN transmits the message in response to a change in at least one of WLAN-related signal strength, signal quality and other information.

27. A data communications system comprising a mobile node (MN), a wireless local area network (WLAN) and a cellular network, further comprising:

a transmitter for transmitting a message from the MN to the cellular network via the WLAN, the message comprising information for use in establishing access bearers in the cellular network for an ongoing packet data session of the MN being conducted through the WLAN; and

a unit to respond to the receipt of the message with a Router Advertisement message that is forwarded towards the MN.

28. A system as in claim 27, where the message is piggybacked on another message.

29. A system as in claim 28, where the message is piggybacked on a Router Solicitation message that is sent from an access router (AR) in response to receiving a Proxy Solicitation Request message from the MN.

30. A system as in claim 28, where communication between the MN and the cellular network comprises a HI/HACK (Handover Initiate/Handover ACK) message exchange, where the message is piggybacked on a HI message, and where the cellular network responds to a receipt of the message with a Mobile Node-Foreign Agent (MN-FA) challenge extension that is piggybacked on a HACK message

31. A system as in claim 27, where the message comprises information expressive of at least one of a QoS requirement of at least one ongoing application of the MN, a unique identity of the MN that is recognizable by the cellular network, parameters to facilitate the creation of a Point-to-Point Protocol state in the cellular network, and parameters to enable establishment of packet filters in the cellular network.

32. A system as in claim 27, where the message is received by a Packet Data Support Node (PDSN).

33. A computer program embodied on a computer-readable medium for controlling operation of a mobile node (MN) that is operable with a wireless local area network (WLAN) and a cellular

network, said computer program being responsive to a change in at least one of received WLAN signal strength and signal quality for transmitting a message from the MN to the cellular network via the WLAN, the message comprising information for use in establishing at least one access bearer in the cellular network for an ongoing packet data session of the MN being conducted through the WLAN.

34. A computer program as in claim 33, where the message is piggybacked on another message.

35. A computer program as in claim 34, where the message is piggybacked on a Router Solicitation message that is sent from an access router (AR) in response to receiving a Proxy Solicitation Request message from the MN.

36. A computer program as in claim 34, where communication between the MN and the cellular network comprises a HI/HACK (Handover Initiate/Handover ACK) message exchange, where the message is piggybacked on a HI message, and where the cellular network responds to a receipt of the message with a Mobile Node-Foreign Agent (MN-FA) challenge extension that is piggybacked on a HACK message

37. A computer program as in claim 33, where the message comprises information expressive of at least one of a QoS requirement of at least one ongoing application of the MN, a unique identity of the MN that is recognizable by the cellular network, parameters to facilitate the creation of a

Point-to-Point Protocol state in the cellular network, and parameters to enable establishment of packet filters in the cellular network.

38. A computer program embodied on a computer-readable medium for controlling operation of a network node of a cellular network, said computer program being responsive to a receipt of a message from a mobile node (MN) that is currently wirelessly coupled to a wireless local area network (WLAN) for initiating the establishment of a cellular network access bearer for the MN, the message comprising information for use in establishing the at least one access bearer in the cellular network for an ongoing packet data session of the MN being conducted through the WLAN.

39. A computer program as in claim 38, where the cellular network node comprises a packet data support node (PDSN).

40. A computer program as in claim 39, where the cellular network comprises a cdma2000 cellular network.

41. A computer program as in claim 38, where said cellular network node responds to the receipt of the message by sending a Router Advertisement message that comprises a Mobile Node-Foreign Agent challenge extension message towards the MN.

42. A method as in claim 26, where the other information comprises geographical coverage information

43. A method to perform a low latency inter-technology handoff of a mobile node (MN) from a wireless local area network (WLAN) to a cellular network, comprising:

transmitting a message from the MN to the WLAN for use by the cellular network, the message comprising information for use in establishing at least one access bearer with the cellular network for an ongoing packet data session of the MN being conducted through the WLAN, the information comprising information expressive of a QoS requirement of at least one ongoing application of the MN and information expressive of a unique identity of the MN that is recognizable by the cellular network; and

responding to the receipt of the message with a response message that is forwarded to the MN, the response message comprising a challenge for authenticating the MN in the cellular network.

-- END OF CLAIMS --

(9) EVIDENCE APPENDIX

There is no evidence submitted pursuant to 37 C.F.R. §§1.130, 1.131, or 1.132 or entered by the Examiner and relied upon by Appellant.

(10) RELATED PROCEEDINGS APPENDIX

There are no known decisions rendered by a court or the Board in any proceeding identified pursuant to paragraph (c)(1)(ii) of 37 C.F.R. §41.37.